

Notice of Allowability**Application No.**

10/672,234

Applicant(s)

CZYSZCZEWSKI ET AL.

Examiner

Peter L. Cheng

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/21/2007.
2. ☒ The allowed claim(s) is/are 1,2,4-7,9-12,14-17,19 and 20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

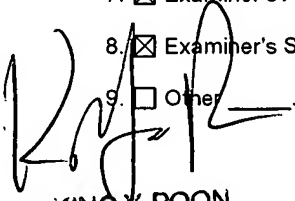
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____.
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KING Y. POON
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Donald M. Duft (Reg. No. 17,484) on 12/17/2007.

2. The application has been amended as follows:

In claim 11:

On **lines 6 - 9**, change "circuitry operable for generating a curve of gray values versus pixel spatial position generating a curve of gray values versus pixel spatial position for each color channel scanned a on a black/white edge or on a solid color edge of a target;"

to --- circuitry operable for generating a curve of gray values versus pixel spatial position for each color channel scanned on a black/white edge or on a solid color edge of a target **---**;

In claim 16:

On **lines 14 - 17**, change "circuitry operable for generating a curve of gray values versus pixel spatial position for each color channel generating a curve of gray values versus pixel spatial position for each color channel scanned on a target having a black/white edge or a solid color edge;"

to --- circuitry operable for generating a curve of gray values versus pixel spatial position for each color channel scanned on a target having a black/white edge or a solid color edge ---;

3. The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

- **Fig. 6A**, of the two reference labels **602**, the one further to the right currently points to the line pointed to by reference label **601**; this label **602** should instead point to the middle of the three lines; for reference, please see the original drawings submitted on 9/25/2003;

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

4. Claims 1, 2, 4 – 7, 9 – 12, 14 – 17, 19 and 20 are allowed. The following is an examiner's statement of reasons for allowance.

Claims 1, 6, 11 and 16 are respectively directed to a method for detecting and compensating for color misregistration, a corresponding computer program product, a corresponding system, and a corresponding scanner. Claim 1, as do claims 6, 11 and 16, identifies the uniquely distinct features of:

wherein said misregistration error is calculated for said black/white edge scanned on said target, and

wherein said misregistration error between a first color channel and a second color channel is equal to the equation: $\text{error} = \text{diff1} / \text{diff2}$;

wherein diff1 is equal to the difference in gray values at a particular pixel position between said first color channel and said second color channel; and

wherein diff2 is equal to the difference in gray values between neighboring pixel positions in said first color channel

Applicant's claims include elements which are not taught by the prior art nor rendered obvious.

For example, **NABESHIMA [US Patent 6,587,224 B1]** teaches a method for detecting and compensating for color misregistration comprising the steps of:

scanning a *target having a black/white edge or a solid color edge*

[NABESHIMA teaches a method to correct chromatic aberration by scanning a correction chart; see **Fig. 3** chromatic aberration correction chart **17**. "Each of black solid patches 17a – 17c is a black rectangular pattern"; **col. 5, lines 17 – 18**. NABESHIMA also teaches that a color other than black may be used. "For example, a solid patch of gray in color can be drawn on a white color plate"; **col. 5, lines 32 – 33**];

generating a curve of gray values versus pixel spatial position for each color channel *scanned on said black/white edge or on said solid color edge of a target*

[**Fig. 5** illustrates three "gray value" curves for the red, green and blue color channels. "In the graph of Fig. 5, the CCD output is plotted along the vertical axis and the CCD pixels are plotted along the horizontal axis"; **col. 5, lines 62 – 64**. "When the CCD output value of all the R, G, and B outputs is 255, "white" is represented. When all the CCD output values of the R, G, and B outputs is 0, "black" is represented"; **col. 5, line 66 – col. 6, line 2**];

calculating a misregistration error by calculating an offset between color channels

[NABESHIMA teaches that the misregistration error (ΔR or ΔB) is calculated as a difference between "edge pixels" of two color channels. "The edge pixel

(Re, Ge, Be) for each output of R, G, and B described with reference to Fig. 5 is obtained by edge determination circuit 38"; **col. 7, lines 5 – 7**. "The chromatic aberration correction coefficient corresponds to the distance ΔR between edge pixels Ge and Re, and distance ΔB between edge pixels Ge and Be"; **col. 7, lines 10 - 13**];

and calibrating a unit *such as a scanner* using said calculated misregistration error

[NABESHIMA teaches that this "misregistration error" (i.e., the chromatic aberration correction coefficient) is used to correct the chromatic aberration. This correction process is illustrated in **Fig. 8**. When the error value is equal to 0 (**step S21**), with respect to either chromatic aberration correction coefficient ΔR or ΔB , "the process ends without effecting chromatic aberration correction since chromatic aberration does not occur"; **col. 7, lines 24 – 27**. Otherwise, if the error value is a positive value, "contraction interpolation" (**step S23**) is performed, and if the error value is negative, "enlargement interpolation" (**step S24**) is performed; **col. 7, lines 29 - 34**].

However, prior art such as NABESHIMA's does not teach nor renders obvious the uniquely distinct features cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter L. Cheng whose telephone number is 571-270-3007. The examiner can normally be reached on MONDAY - FRIDAY, 8:30 AM - 6:00 PM.

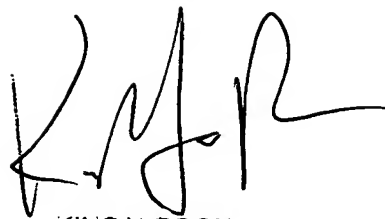
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number:
10/672,234
Art Unit: 2625

Page 8

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December 17, 2007

A handwritten signature in black ink, appearing to read 'K. Y. Poon', with a stylized, flowing script.

KING Y. POON
SUPERVISORY PATENT EXAMINER